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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,562	10/15/2001	Shigeru Kitsutaka	110712	2254

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Oliff & Berridge
PO Box 19928
Alexandria, VA 22320

EXAMINER

HSU, RYAN

ART UNIT	PAPER NUMBER
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3713

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/937,562

Applicant(s)

KITSUTAKA, SHIGERU

Examiner

Ryan Hsu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/04/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7, 12-18, and 23-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed invention must produce a “useful, concrete, and tangible result.” However, claims 1-7, 12-18, and 23-29 lack in disclosing a “useful, concrete, and tangible result”. Instead the limitations of the claims concentrate on elements of a computer data structure or program (ie: means which transform a depth value of each pixel of an original image into a second depth value;). The claim itself only recites that the software implementation generates an image, but fails to provide a means of producing a useful result or a mention of a tangible medium, in order to enable its functionality to be realized.

Claims 12 and 18 are also rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory matter. A claim that is directed towards software, program, instructions, code, data structure or a signal that does not recite a tangible computer readable medium is non-statutory subject matter. It has been determined that a “carrier wave” is not sufficiently tangible. See MPEP 2106 IV B 1 (a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldwin (USPN 5,835,096) and further in view of Smith et al. (USPN 6,599,194 B1).

In reference to claims 1, 12, and 23, Baldwin discloses a system which generates an image comprising: means which transforms a depth value of each pixel of an original image into a second depth value formed of lower bits of a pixel which are positioned lower than the most significant bit of the depth value (*see col. 7: ln 1-22, col. 19: ln 1-15, col. 30: ln 45-col. 31: ln 8, col. 33: ln 65-col. 34: ln 67, col. 50: ln 1-8*); means which sets an alpha value of each pixel to a value corresponding to the second depth value; and means which generates an image based on the set alpha value (*see col. 53: ln 50-col. 54: ln 10*). However, Baldwin lacks in disclosing the use of his system with a game system. Although he does implement it on a computer with structural means which are analogous to the game system consoles.

Smith et al. discloses a method of implementing alpha blending using a game system, through the overlaying of a TV signal on a video game image (*see col. 15: ln 10-20, col. 16: ln 20-34*). It would therefore be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Baldwin with Smith in order to implement the teachings of Baldwin into a system such as Smith's in order to create a more visually entertaining experience for the user.

Claim 2, 13, and 24, Baldwin discloses a system wherein the original image is blended with a defocused image of the original image based on the alpha value set for each pixel. The

process of alpha blending distorts the transparency of an original image in order to allow for the two objects to appear blended together (*see col. 53: ln 65-col. 54: ln 45*).

Claim 3, 14, and 25, Baldwin discloses a process wherein the defocused image of the original image is generated by disbursing the original image into a texture buffer and shifting the texture buffer coordinates of a virtual objects disbursed in a similar and then mapping the two objects together through texel interpolation (*see col 53: ln 1-60, col. 53: ln 65-col. 54: ln 11*).

Claim 4, 15, and 26, Baldwin discloses a method of alpha blending wherein the second depth value is clamped into a give value depending on a bit value contained in the pixel information in the buffers (*see col. 39: ln 64-col. 40: ln 67*).

Claim 5, 16, and 27, Baldwin discloses the use of buffers and lookup tables to store the index numbers of depth values which are used for index color texture-mapping and the depth value is retrieved to be transformed into a second depth value by performing index color texture-mapping on a virtual object by using the lookup table (*see col. 51: ln 60-col. 52: ln 67*).

Claim 6, 17, and 28, Baldwin's system of combining two images to maintain texture and realism uses bit information stored in the buffers to retrieve the depth values (ie: Z-buffers) that are set in the original image (*see col. 3: ln 23-31, col. 6: ln 65-col. 7: ln 22*). These are then compared and interpolated to create a third and fourth depth value (ie: the transformed depth values of the original two images) and used to determine the new second depth value (*see col. 19: ln 1-40, col. 45: ln 1-45, col. 48: ln 29-col. 50: ln 33, col. 51: ln 60-col. 52: ln 40*).

In reference to claim 7, Baldwin discloses an image processing system, which generates an image comprising to be used to provide enhanced graphics capabilities. The processing system has been implemented to allow for animated images, which utilizes concepts such as

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textural interpolation and alpha blending (*see col. 29: ln 10-24, col. 29: ln 31-43, col. 39: ln 40-60, col. 53: ln 60-col. 54: ln 11*). Alpha blending is a well-known and common implementation in the MMX instruction set under the x86 architecture that utilizes a portion of a pixel's stored data to control transparency. As a result it forms a mask effect where an image may be overlaid upon another so that typical objects may appear to blend into the background of screen giving the appearance that they appear as one image. This is a basic concept that allows for modern day 3-D rendering of images and graphics. The implementation of this method includes using several buffers, commonly known as lookup buffers, that contain the information of the two images containing the index color texture-mapping information so that the two may be observed and compared by the processor in order to properly blend the two images together (*see col. 6: ln 65-col. 7: ln 22, col. 53: ln 30-64*). This is discussed in Baldwin where a means which sets bits in a given image information as an index number in a first lookup table for index color texture-mapping is set up (*see col. 19: ln 1-15, col. 23: ln 40-60*). At this time the first lookup table from a source image or object to transform the image information into a third a destination buffer (ie: third image). Additionally the same process is done on the 2nd image through a same image that will be overlaid on top of the previous image in a destination buffer (ie: fourth image) in order to form a new buffer that contained the third and fourth information to be displayed on the screen (*see col. 29: ln 5-col. 31: ln 5*). This information is transferred in the traditionally in the form of 32-bit words (24 bits for color information (RGB) and another 8 for the alpha level). Although, Baldwin lacks in disclosing the use of this implementation in a game system it does implement this system on a computer with a display device, with the structural capability of playing video games.

However, Smith et al. discloses the use of alpha blending to be implemented on a video game system. Smith teaches the use alpha in order to blend the video game with a picture-in-picture capability so that a TV signal maybe overlaid on the display screen (*see col. 15: ln 10-20, col. 16: ln 20-34*). One would be motivated to take the teachings of Smith one step farther and implement the additional feature of alpha blending into a video game program in order to create a more realistic animated graphical experience for the user. Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Baldwin with Smith in order to have a game system that implemented the use of the alpha-blending concept.

With regard to claims 8-11, 19-22, and 30-33, Baldwin implements the creation of two overlapping images through the use of alpha blending as described above. Additionally, Baldwin discloses the ability for a virtual object that is a polygon (essential for 3-D texturization in the computer graphics art) having a size equal to a size of a display screen (*see FIGS. 1-3, col. 7: ln 8-22, col. 25: ln 50-col. 26: ln 5*). Additionally, Baldwin discloses a game system wherein the virtual object is a polygon having a size equal to a size of a block obtained by dividing a display screen into blocks. Display screens are inherently divided into blocks as screens are made up of standard pixels in order to create the object that is to appear on the screen.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oki et al. (US 6,559,854 B2)- Image creation device.

Kenworthy et al. (US 5,808,617) – Method and System for Depth Complexity Reduction in a Graphics Rendering System.

Narayanaswami (US 5,844,571) – Z Buffer Bandwidth Reductions via Split Transactions.

Any inquiry concerning this communication or earlier communication from the examiner should be direct to Ryan Hsu whose telephone number is (571)-272-7148. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan M Thai can be reached at (571)-272-7147.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 1-866-217-9197 (toll-free).



RH

May 31, 2005



JOHN M. HOTALING, II
PRIMARY EXAMINER